THE FORMAL WORK-PRODUCT OF THE FEDERAL POWER COMMISSIONERS*

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* A review article on Volume 42, The Federal Power Commission Reports. This is one of a series of preliminary studies leading to a systems analysis of the Federal Power Commission, conducted with support from the Brookings Institution in its program of Studies in the Regulation of Economic Activity. The author is grateful to Brookings and, ultimately, to the Ford Foundation for such support and to Stephen Breyer and Donald Turner of the Harvard Law School for suggestions and guidance.

The Federal Government publishes each year a volume of reports of cases decided at the Federal Power Commission. The cases are rendered in chronological order, dealing with a wide variety of subject matters related to pricing and sales of natural gas and electricity in interstate commerce. They are most of the formal work or "output" of the five Federal Power Commissioners that is supposed to guide the surveillance activities of F.P.C. staff members, and ultimately regulate the economic performance of the electricity and natural gas industries. The last complete set of such cases, comprising Volume 42 of The Federal Power Commission Reports, provides a record of the last few months of the Chairmanship of Lee C. White in 1969 and the beginning months of the new Republican Chairman, John C. Nassikas in that same year. As far as can be determined, not many friends or critics of the F.P.C. have read this volume of 1041 pages through to the end, possibly because there are few general questions that can be answered by doing so. This volume is reviewed here to answer only two questions: how were the Commissioners' decisions arrived at, and how are they likely to affect the economic performance of the regulated companies.

The process of decision-making by the Commissioners is surprisingly obscure, buried not only in the more than 350 cases in Volume 42, but in their informal and unreported procedures for separating the formal cases from staff activities. The legislation of Congress in the Federal Power Act and the Natural Gas Act, and the F.P.C. cases decided on appeal by the Federal Courts, limit the Commissioners in their decisions and require

the use of certain language in their written findings and orders. But it is not at all clear that precedent here is so strict as to affect decision-making substantially -- the statutes and appeals cases appear to be so general that they serve as the basis not for deciding a case, but for rationalizing a decision once it has been made, by resort to voluminous references and citations in the written reports. The relationship between Commissioners and staff detracts from the information content of the cases. The Commissioners decide what matters are going to become subjects for cases by directing the staff to carry on certain surveillance activities. The staff initiates the formal dockets of cases, and in many instances terminates them by arranging settlements between opposing parties. This replaces Commissioners' case work. But when there are formal cases, staff in the F.P.C. legal counsels' office writes the case decisions, after the Commissioners make known their positions on the issues. Even with close working relations, there has to be an element of justification in the final case report when the Commission members decide, but their staff writes down the decision. As a consequence, it is not likely that a volume of reports on cases will show how the Commissioners decide the issues.

The effects of Commissioners' activities cannot be assessed very well without insight into their ways of deciding. The individual cases certainly render orders for those individual companies making the application or defending in that case, and this has an "effect";

but those involved in the case are only a small proportion of companies affected. A formal case reported in Volume 42 is supposed to require behavior of those particular companies involved in that issue, and all other companies in like circumstances but not involved in that specific instance. If it is not clear what the conditions were for determining the formal order -- what the Commissioners' general decision rules were -- then it is not possible to assess the effects on other companies when conditions are not exactly the same. The Commissioners may record that a rate of return on original capital of 7.25 per cent is the "fair and reasonable rate of return" for Florida Gas Transmission (42 FPC 89), but that does not mean that the reader of the case can infer that other firms would be limited to that rate under almost the same circumstances. Perhaps the only inference is that the terms "fair and reasonable" can be used to describe allowed rates of return as low as 7.25 per cent and as high as 8.50 per cent (cf. the decision #585 issued in the case of Southern Natural Gas Company).

The Commissioners might conceivably be judged on what they did in Volume 42, rather than on the reasons they gave for doing it. They recorded decisions in 168 cases involving applications for certificates of necessity and convenience[1] needed to construct new pipeline facilities,

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1 The count of cases in each category is a matter of judgment, since single formal decisions are rendered in two or more dockets in some instances, and formal decisions are shown in dockets which are motions on other dockets. The practice here was to count as a "case" each docket mentioned in a formal or written opinion, even if the order was only to allow or disallow a motion in a proceeding.

and dealt with 42 cases of amendments to previously-issued certificates. In this same volume, there are 57 cases involving licenses for the construction of electric power facilities, or for the operation of ongoing power plants, where the company transports bulk power in interstate commerce so as to come under the jurisdiction of the F.P.C. Both gas pipeline and electricity companies were involved in 56 cases on prices, profits, and rates of return on capital. Both were involved in 22 applications for Commission permission to issue short term notes, stock, and long term bonds for the purpose of raising additional capital. There were a number of miscellaneous cases, including 11 applications for abandonment of aged or outmoded facilities, 4 petitions for changes in payments of charges that the F.P.C. levies on regulated firms, 4 statements of the Commissioners on changes in their proceedings or rules, 2 proposed amendments to the Power Act, 2 applications for the sale of facilities, and one application for importation of more gas from Canada. This is a mixed bag, not greatly different from that in preceding Reports, perhaps not indicative of the thrust of regulation except to show the much larger volume of cases on rights to entry and expansion than on prices or profits. But by examining the pattern of decisions in the certificate, rate of return, and the licensing cases, it may be possible to infer the goals of the Commissioners which lie behind their formal actions. Attempts will be made to classify cases by broad categories. Then the Commissioners will be assumed to be seeking to add to some one aspect of regulated

company behavior, such as the rate of sales, or the accumulation of profit, and finally the question will be which assumed Commissioners' goal best "explains" the classification of cases.

This is different from interpreting the arguments made in the written cases, because it centers on classification of the findings and orders after the argument has been made. The Commissioners in each case did or did not grant a certificate, or allow a higher rate of return on capital. They described the factual circumstances surrounding the issue in some cases, as well. The cases have to be read -- this review of Volume 42 really is necessary -- in order to compile the decisions as "granted" or "denied" in the circumstances of the original application, and to compile the circumstances into roughly contrasting categories. They may show what the Commissioners have had in mind for the electricity and gas industries.

Certificates of Necessity and Convenience

The first case reported in Volume 42 is that in Docket No. CP69-279, on the application of Arkansas-Louisiana Gas Company for permission to install a meter on a 2" pipeline in order to provide gas service to an industrial consumer, Mobil Oil Corporation, in Nevada County, Arkansas. The cost of facilities, to be "financed with cash on hand", was forecast as $3,574. The Commissioners took these costs and the accompanying engineering drawings of the project and, after notice in the Federal Register had produced no protest, granted the certificate. Specifically, they

found Arkansas-Louisiana "able ... to perform the service proposed" and that the construction and operation "are required by the public convenience and necessity" (42 FPC 1).

The Commissioners give no account of their reasoning leading to this decision. Even though the right to tap an existing line and install a meter would seem part of normal business activities, the project required case preparation by both company and F.P.C. staff, and subsequently the time required for five Commissioners to approve. How they did so -- on the basis of engineering drawings, forecast costs, and the volume delivered to Mobil -- is not written down in the one page of description, findings and orders.

There are 123 other case reports in Volume 42 of applications by gas pipelines and producers for certificates to operate new facilities; not all of them were uncontested, but all were granted by the Commissioners.[1] The form is the same in each case as described for the Arkansas-Louisiana decision -- a few paragraphs of description of the proposed facilities, a paragraph taking note that the application had been listed in the Federal Register, then usually five paragraphs of "findings" written out in terms identical except for the name of the applicant, followed last by two or more paragraphs of orders for issuing the certificate with conditions. The applications varied from plans to construct a metering station in Johnson County, Alabama for $450 -- surely less than the company's cost of preparing this request in Docket No. CP70-39 (at 42 FPC 997) -- to plans for

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[1] There were also 22 cases which ruled on motions in other certificate proceedings. Of these, 12 were allowed and 10 were denied -- the latter mostly on questions of reopening previous certificate decisions.

building $14.7 million of underground gas storage facilities in Lewis County, Washington (a set of plans approved in one-half of a page, at 42 FPC 155). Neither the presence of an objector or of other interveners, nor the scale of the project, affected the Commissioners' decision on whether to grant the certificate. The single principle binding these cases together is that the applicant received what he came for in every recorded instance.

The avowed purposed of the application for a certificate has been to "advise the Commission fully concerning the operation, sales, service, construction, extension, or acquisition" (157.5 Regulations Under the Natural Gas Act), but the purposes for granting the certificate have not been made clear. Once the Commissioners have been advised, what are they supposed to do -- grant each applicant his certificate? There are any number of hypotheses as to their motivation, some of which "explain" the universality of their approval.

One motivation for the line of decisions on certification might be to increase pipeline profits. The pipelines' interests center on adding to facilities so as to increase their return on capital; by proposing only those projects which do so, they present to the Commission the opportunity to maximize returns to those being regulated. This might be done without compromising the Commissioners in any way. The Commissioners do not have to be taking bribes, or even expecting to accept employment in the regulated industry, in the long tradition of Securities and Exchange Commissioners. Rather, there has to be no more than the tendency to protect the regulated industry in reaction

to sustained petition, argument and proposals for making it possible for firms to "survive."[1] The erosion of resolve to "protect the public" is conceivable given that protection was not defined by statute or court, and that it was not made an operational term by voters' preferences for members of the Commission. But there is no direct test of this motive other than the insight it offers into the unanimity of the Commissioners' affirmation of certificates.

An alternative motivation for allowing certification might be to provide the maximum economic service for final consumers of gas. This would require the F.P.C. to have defined "protection" in a workable manner consistent with increasing service so that final gas prices approach the marginal costs of providing the service. The pipeline companies would have been expected to propose new service at initial prices equal to marginal costs, and would have been impelled to do so when it looked as if the proposal was more limited than necessary to meet these pricing conditions. The source of initiative might be the retail public utilities buying gas from the applicant. Here an additional element of complexity enters, however, because the buyers' goals are not the same as the final consumers (since the buyer wants gas as cheaply as possible -- below marginal

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1 It is literally true that maximum monopoly profits are necessary for present stockholders to survive, because they paid the present capitalized value of these profits in order to obtain their stock. The protection of their investment requires the Commission to fulfill their (and the capital market's) prophecy.

pipeline cost -- for resale at final prices as high as consistent with his profit maximization). Even if the retail utility buyer is the source of initiative in bringing or contesting cases, the Commissioners might still be assumed to resolve pipeline-retailer differences so as to maximize gains for final consumers by granting all certificates for deliveries with prices that just cover the additional costs of making these deliveries. Alternatively, the Commissioners might be assumed to resolve disputes generally in favor of the retail utility buyer, so that some deliveries result in prices for the pipeline below marginal costs.

Any of these views of Commissioners' motives implies that all of the pipelines' applications are likely to be granted. The maximization of pipeline profits requires that all requested additions to facilities be allowed, excepting those which would add to inter-pipeline competition; for after all, the pipelines themselves can best appraise the profitability of additional facilities and would only apply for the right to construct those that would be profitable. The maximization of consumers' gains would require those to be approved, plus more that were not applied for -- those offering prices only equal to marginal costs.

In fact, the Commissioners probably did grant more certificates than just those needed to maximize pipeline profits. They must have allowed a number of marginally-economic projects in 1969. The first indication of this is that they allowed marginal projects in previous years, given that a large number of earlier projects had to be amended

and recertified in 1969 to make them marginal. There were 42 applications for amendments to certificates in that year, and 41 were allowed while one was denied by the Commissioners in decisions shown in Volume 42.[1] They were amended for three reasons which were mentioned with roughly equal frequency: (1) costs given in the earlier application were too low, (2) the original time schedule for construction and operation could not be met, (3) the original plans setting the scale of the project called for relatively inefficient facilities. In the September 1969 application of the Southern Natural Gas Company for an amendment of the Order of March 29, 1967 (as in 37 FPC 647), all three changes were present. The pipeline asked for the right to redesign a previously-proposed river crossing facility of multiple lines which "would not have been feasible", and for the right to eliminate delivery to one of the proposed buyers. The costs of the original facilities were estimated to be much higher than the original application showed, and would have been $2.2 million greater than the redesigned, reduced-scale facilities (43 FPC 690). This case and others similar to it may only indicate that the regulated firms make mistakes and take on submarginal projects even when provided with the opportunity to maximize profits. But the large number of such cases, and their originally-conceived "marginality", are more in keeping with conditions in which the pipelines are expected to offer for certification very low profit additional projects.

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1 The one application not allowed had procedure defects and was denied on those grounds: cf. 42 FPC 933.

The Commissioners also approved ten new projects in 1969 that were not requested by the pipelines required to carry them out. The applicants in these cases were municipalities or local retail utilities seeking an order under Section 7(a) of the Natural Gas Act requiring a pipeline "to extend or improve its transportation facilities, to establish physical connection ... and sell natural gas" (156.1 Regulations Under the Natural Gas Act). The Mid-Illinois Gas Company, a retail distributor, requested that Panhandle Eastern Pipeline be required to connect to a Mid-Illinois receiving line and deliver 603 mcf of gas per day to Mid-Illinois, on grounds that Panhandle "provides the only feasible source of natural gas for the (Mid-Illinois) areas" (42 FPC 558). The town of Hope, Indiana, proposed to construct 8.25 miles of 3" and 4" pipeline to the main line of Michigan-Wisconsin Pipeline Company so as to take 1623 mcf per day, and requested that Michigan-Wisconsin be required to connect and to provide this amount (42 FPC 565). Both the small retailer and the town of Hope had their requests granted by the Commissioners, as did eight other retail distributors. Here the Commissioners were acting as if they wanted to increase the extent of service beyond the bounds set by the pipelines themselves.

The impression from the cases is that the Commissioners approved every request made by a pipeline to build new facilities, including some that were marginally economic, and the Commissioners also approved a small but important number of new pipeline facilities that the pipelines did not request. This pattern of decisions is most consistent with increasing sales to retail buyers and final consumers. But it

does not allow the reader to distinguish between the practices of Commissioners seeking to maximize the economic welfare of final consumers, and the practices of members seeking to maximize the gains of the retail utility against those of the final consumers.

The other impression is that this is almost all of the information content in more than 185 cases. The few indications here of what the Commissioners are trying to do are not worth their costs. The universal granting of certificates, always with the same pronouncements of findings and orders, requires fairly elaborate preparation of documents by the applicant and careful preparation of drafts of the decision by the F.P.C. staff, and finally requires the deliberation of the five Commissioners. The Commissioners' time spent on a single certificate case may not be extensive -- the one-third of Volume 42 devoted to certification may have required only one-tenth of the time -- but that in itself shows that there is little decision-making here. The applicants' and staff's time together are not worth the resulting automatic rendering; the reader's time in finding the "will of the Commissioners" is not worth the hundreds of pages of case rhetoric. The Commissioners can do as much by making the certificate application a "filing of information" on new construction, and a matter for a case decision (signed by one of the Commissioners as the author of the opinion) only when there are parties to an issue.

Prices and Rates of Return of Gas Pipeline Companies

The transporter of natural gas is allowed to earn a rate of return on pipeline investment that meets the "financial needs of its investors" and that "assures consumers a continuing supply of gas at the lowest reasonable rates."[1] These companies devise the rate or price schedules for sales to retail utilities and municipalities which, given expected costs at expected sales levels, result in such defined "legally allowed rates of return on capital." The price schedules are submitted to the Commission for review, and the reviews at times result in cases for final decision on rates of return by the Commissioners. There were 29 cases on prices, profits and rates of return set out in Volume 42, 22 resulting in findings in favor of the pipeline company, and 7 against. There were also 27 cases on motions relating to previous rate of return cases, 9 of which were granted and 18 of which were denied by the Commissioners. All of the cases on motions in cases were inconsequential, since they did no more than once again finalize previous decisions. Most of the rate cases themselves were not concerned with finding allowed levels of rates of return, but rather with the necessity of hearings on new schedules filed with the F.P.C.,[2] or with refunds if higher returns were found in other proceedings to be unjustified.[3]

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1 Natural Gas Pipeline Company of America, 40 FPC 81.

2 Mississippi River Transmission Corporation, 42 FPC 272.

3 Consolidated Gas Supply Corporation, 42 FPC 325.

Very little of what the Commission did here was important, in the sense of affecting prices generally or even in a case at hand.

There was one case in which the Commissioners completed a full review of the rate of return of a large gas pipeline, and subsequently allowed this return to go to 7.25 per cent, the highest level legally permitted in the 1960's. Florida Gas Transmission proposed higher prices on all its regulated sales in August of 1968, and the F.P.C. suspended them until February of 1969 when they became effective subject to refunds. The Company and the F.P.C. staff both made a presentation of evidence on the minimum allowable rate of return, in order to justify these or lower prices. The evidence was based on actual costs of debt interest in the review or "locked-in" period from June, 1968 to February, 1969, and also on actual rates of return on equity of "comparable" companies in the same period. These calculations were supposed to show the opportunity costs of investors -- if they did not receive comparable interest and comparable profit rates from the Florida Company in the future, then they would withdraw capital from this firm so that final gas service would no longer be "assured." But the Commissioners did not accept the methods used in these calculations -- "we have repeatedly stated that the relative weight to be given the varying factors (in rate of return) does not lend itself to precise mathematical determination,"[1] nor did they agree with the final rate estimates of either the Company or their own staff. Given a choice of

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1 42 FPC 74, at 83.

7.50 per cent return from the Company's economic witness, or the staff's recommendation of 7.0 per cent, the Commissioners found the return of 7.25 per cent to be "the fair and reasonable rate of return."

What were the Commissioners trying to do in this case? Formally, they were attempting to apply the proposition that historical costs equal future costs for pricing purposes, whether the historical costs were those of Florida Gas or of "comparable" companies. The focus was on "the higher imbedded debt cost during the (latest) two docket periods" and "a slightly higher rate on equity which we believe is justified in the light of the shift in capital from 64.46 per cent debt as of the time of RP 66-4 to 71.73 per cent in the (latest) docket."[1] The rate on equity was justified as well on grounds that it was lower than allowed in "the three most recently contested cases determining rate of return before this Commission."[2] There is no economic reasoning supporting this proposition -- the costs of using resources are not historical costs, even though they may not be greatly different. The justification is that, as an estimating procedure, it produces forecasts that have the right results, even if without logical reasons; in the Commissioners' own terms, "consideration of the evidence in this record and particularly the Company's own evaluation of its accomplishment over the nine year period of its existence leaves little doubt that it has made tremendous strides in growth of physical plant and average daily throughput, made impressive increase in earnings, and

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1 42 FPC 89.

2 42 FPC 88.

secured adequate financing on the rates of return we have allowed."[1] A description of the formal procedure does not provide an answer.

The question here is the same as in the certification procedures -- what are the Commissioners' standards for making decisions, and for determining whether the results of their decisions are favorable? Placing emphasis on an "impressive increase in earnings" would suggest that the Commissioners have been striving for maximum profits for Florida Gas, while greater emphasis on "growth of physical plant and average daily throughput" would, to the contrary, imply that they have been seeking to maximize the final consumers' gains from sales. The invocation of contradictory "good results" in their opinion obscures the reader's evaluation of the Commissioners' historically-based price setting procedures. The only possibility is to assume that the Commissioners know what they are doing, despite the published approval of contradictory results, and that they have decided on the rate of return that best achieves their goals. If this is conceivable, then an examination of the promised returns shows their reasons and their methods.

The Florida Gas Company in 1960 was allowed an overall return on capital of 6.0 per cent, and a return on equity of 12.5 per cent with equity accounting for only 15 per cent of capital structure. Adjustments in the overall allowed return were made in 1962 (to 6.5 per cent) and, in the first sections of this <u>Volume 42</u> case, in 1965 (to 7.0 per

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[1] 42 FPC 88.

cent) and 1968-69 (to the aforementioned 7.25 per cent). At the same time, adjustments were also made in the allowed return on equity, but increases in the equity-capital ratio in part eliminated these increases in rates of return; the rate stayed close to 12.5 per cent until 1963, and thereafter fell to approximately 10 and then 9 per cent as the equity ratio increased to 35 per cent. The case at hand reversed this decline, by allowing 9.9 per cent in 1968 and 1969 with an equity ratio of 28 per cent.

Were these limits what might be termed "generous," in the sense of providing ample opportunities for this firm to make profits? The Florida Gas Company would seem in fact to have had more opportunity than it needed: in the first seven years of operation, it earned from one-half to two-thirds of the allowed return on equity. This could have been a result of having to pay more for debt capital than originally forecast in 1960 so that, given the 6.0 per cent to 7.0 per cent limit on overall earnings, interest payments replaced equity returns. But such an explanation is not complete, because Florida failed to earn the overall allowed rate of return in any of these seven years (as shown in Table 1). Competition from other fuel sources, and relatively limited industrial markets for energy in Florida, limited Florida Gas from earning what the Commissioners had allowed; in that sense, the Commissioners set no limits on the profits of the regulated firm and it has to be assumed that they meant to set no limits.

The Florida Company probably still made profits for its stockholders over and above their opportunity costs. These stockholders had among many alternatives the opportunity to borrow or lend at a risk-free interest rate i, and the opportunity to form a portfolio of securities from those available on any of the many securities exchanges. Their next-closest alternative might well have been to invest in stocks of electricity-generating companies which would have to provide the rate of return $R_j = i + b(r_{jm}L_jS_j)$, equal to the risk-free rate of interest plus a marginal rate compensating for the non-diversifiable risk in that investment in electricity share j (with b equal to the marginal required rate of return per unit of non-diversifiable risk, r_{jm} the coefficient of correlation between the rate of return on electricity share j and the market portfolio, S_j the standard deviation or "risk" of the rate of return j --- so that $r_{jm}L_jS_j$ is non-diversifiable risk).[1]

This is the factual proposition often stated before the Commission, and implicit in the Commissioners' use of indicators of comparable earnings: the opportunity cost of investment in gas transmission is the rate of return on an electricity investment since electricity shares are freely available and the conditions of market structure, demand, and costs are the same, so that earnings are as risky.[2] This opportunity

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[1] This formulation is from R.H. Litzenberger and L.U. Rao "Estimates of the Marginal Rate of Time Preference and Average Risk Aversion of Investors in Electric Utility Shares 1960-66" The Bell Journal of Economics and Management Science, Vol. 2, #1 Spring, 1971.

[2] Risk is measured relative to that of the market as a whole since the investor can hedge any other variability in earnings.

cost is shown in Table 2 for 1960 to 1966 from Litzenberger and Rao's marginal rates of return on the average electric utility, and on a Florida-type electric utility (found by applying Florida Gas Transmission's equity rate L_j and earnings deviation S_j). Either measure shows costs one point less than the Florida earnings rates after the first year of operation.

Perhaps the Florida decision was exceptional, to the extent of not indicating clearly the Commissioners' intentions. There were a number of earlier decisions on rates of return in the 1960's, many including proceedings in which municipalities and industrial gas purchasers made extensive presentations of rebuttal material on required rates of return. The Commissioners allowed "high" returns in almost all instances. As in the case of Florida Gas, "high" was relative to costs, which Litzenberger and Rao show as marginal rates of return on alternative electricity investments of 5.1 to 6.9 per cent (column 4 of Table 2), while the allowed returns on equity in gas transmission cases were from 8.5 to 10.8 per cent when there were comparable levels of non-diversifiable risk.[1] There were probably many reasons for this three point premium of returns over estimated alternative costs, including errors of estimation; but the impression is that the Commissioners

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[1] The case decisions were chosen on the basis of equity ratios between 35 and 40 per cent, or of sufficient statistics to calculate the allowed equity rate of return on the basis of a 40 per cent ratio. There was not sufficient information to compare S_j for these case decisions and S_j for Litzenberger-Rao, but important inter-industry differences would be quite unexpected. The cases were 24 FPC 26 (1960), 25 FPC 448 (1961), Natural Gas Pipeline Company Settlement (cf. 42 FPC 117)(1962), Cities Service Gas Company certification (cf. 42 FPC 117)(1963), 32 FPC 993 (1964), 42 FPC 98 (1965), 35 FPC 534 (1966).

Table 1: Rates of Return for Florida Gas Transmission Company, 1960-66

	Rates of Return			
Year	overall allowed	overall earned	equity allowed	equity earned
1960	6.0	4.3	12.5	-8.3
1961	6.0	5.9	12.5	5.9
1962	6.5	6.4	14.7	8.5
1963	6.5	6.2	9.8	5.5
1964	6.5	5.4	9.2	5.9
1965	6.6	6.1	9.3	6.8
1966	7.0	6.4	9.4	8.3

Source: 42 FPC 74, The Examiner's Decision at 95-120.

Table 2: Rates of Return and the Costs of Capital, 1960-66

Year	(1) Florida Gas earned return on equity	(2) Commission-allowed return on equity	(3) L-R Costs of Capital Florida	(4) Average
1960	-8.3	10.2	6.7	6.9
1961	5.9	10.8	5.7	5.8
1962	8.5	10.3	6.0	6.1
1963	5.5	10.3	5.5	5.6
1964	5.9	8.5	5.4	5.4
1965	6.8	9.3	5.1	5.1
1966	8.3	8.5	6.0	6.1

Source: column 1 as in Table 1; column 2 compiled from the case decisions by choosing the highest allowed return on equity that year as calculated with 35 per cent equity; column 3 from Litzenberger and Rao, op. cit., for Florida Gas Transmission's values of $L_i S_j$; column 4 from Litzenberger and Rao, for the electricity industry's average equity ratio L_j and experienced standard deviation S_j.

allowed substantial profits over investment costs to many pipelines, and more to Florida Gas than it was able to realize.

The general impression from the rate of return cases is that there were no pervasive or important restraints on profit making by the pipelines. The Commissioners' intentions, if they were realized, may have been to limit extreme profit taking but not to reduce rates of return to levels in keeping with maximum economic gains of final consumers. Rates of return generally seem to have greatly exceeded costs, when the pursuit of maximum consumers gains would have required the Commissioners to have rates equal to or less than costs.[1] The rate of return allowed by the Commissioners in the one case decided in 1969 was higher than market conditions allowed the regional pipeline monopoly to earn. The Commissioners would seem to have wanted to add to pipeline profit gains rather than to consumers' service gains.

Two Cases on Gas Field Pricing

Among the written opinions having to do with price and profit reviews, there were also two short decisions of great importance for setting prices at the gas wellhead. Both were signed decisions, the first consisting of seven pages by Commissioner Carver in Area Rates; Committed Acreage Prices 42 FPC 726, the second consisting of 13 pages by Commissioner O'Connor in Policy Statement; Area Rates; Pipelines

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[1] That is, rates equal to average costs for all gas services, but equal to marginal costs for marginal service. If there are economies of scale, the rates on the marginal service are below average costs.

(Production) 42 FPC 743, and both centered on the balance between "equity and sound policy" in the supply of natural gas by field producing companies.[1] The balance favored equity over sound policy, as the Commissioners defined those terms.

The first case involved issues in F.P.C. price controls on new gas found in old fields. The issues had arisen in the "area rate proceedings" (in which the Commissioners had set maximum area prices that were higher for newly discovered gas than for gas in an older field committed to the pipelines under contracts signed some years previously), because there was no ruling on the proper price for a later discovery of a separate trap or reservoir within an old field. Should these reserves be required to sell at the old gas price, or should there be allowance for the 2-3 cent per m.c.f. premium allowed in the "new field" contracts for new gas? The Commissioners decided that "newly discovered reserves on previously committed acreage should have the price it would have if the contract (for that acreage) had been dated coincident with discovery"[2] and the reason they gave is quite transparent: "equity and sound policy demands that there be incentive for discovery of new gas."[3] This is elaborated somewhat further so that "equity" seems to be making certain that all gas in the same

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[1] Cf. 42 FPC 726, at 729.

[2] Ibid.

[3] Ibid. The grammatical errora in this and the preceding quotation are as in the original text.

general region discovered at the same time had the same price, and "sound policy" was providing the regulatory framework that assured the maximum additional new reserves for any given area price ceiling. The goals were both met by this decision, since prices were equalized while providing additional incentives for discovery.

The two aims of the Commissioners diverged in the second case. Here the issue was pricing for another source of supply, the pipelines producing reserves found by their own exploration companies: "whether the Commission should depart from the cost-of-service method and adopt an area method for pricing gas produced by pipelines or acquired by them from their affiliates."[1] The area method put the pipelines as producers on an equal basis with the independent producers, so that the proposal to adopt area pricing was equitable enough. But there were a number of indications that doing so would subtract from reserve development and production at the margin.

Both pipelines and (intervening) retail distributors centered testimony on costs. El Paso Natural Gas Pipeline indicated that pipeline-owned gas was supplied because contract gas could not always be purchased "at the time it is required and under appropriate conditions to satisfy new or growing markets,"[2] so that this pipeline was using its own production to provide short run peaking service and for long run unexpected demands. Gas used in this way was marginal supply, and

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[1] 42 FPC 738, at 743.

[2] Ibid., at 763.

very probably available only at relatively high marginal costs; in fact, El Paso's costs were 46 cents per m.c.f., more than twice the area rates.[1] More generally, "the evidence in this record ... clearly demonstrates that pipelines operate on a regional basis ... in areas adjacent to their respective pipeline systems,"[2] so as to provide marginal supplies to themselves. The costs generally were greater: the witness for the area rate advocates showed that "pipelines that acquired their reserves most recently (did so) at relatively higher costs,"[3] while the larger pipelines with substantial new self-produced reserves showed as much in their exhibits.[4] The consequence of applying area rates based on regional average costs to these marginal supplies at higher marginal costs would be to reduce supplies, particularly as costs rose in later years.

The Commissioners reviewed this history and found that "cost-of-service pricing of pipeline production ... has lead in the main to high-cost gas coupled with a continuing reduction in the relative amount of pipeline production"[5] so that, at a time "when there are indications of a shortage of gas and a threat of a greater shortage in the future,"[6] the decision was to require the pipelines to price

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1 Ibid., at 767.

2 Ibid., at 769.

3 Professor M.J. Peck, Ibid., at 769.

4 Ibid., as in the Table on page 767.

5 Ibid., at 747.

6 Ibid.

new gas from their affiliates at the applicable area ceiling price. There are two ways of interpreting this history and the final decision, one emphasizing the history and the other the decision. The first view is that the Commissioners extrapolated history, perhaps erroneously, from the late 1950's period of pricing without area rate ceilings or a gas shortage, to the 1970's with both price ceilings and shortage. If costs of pipeline production were "high" and supply "low" in the first period, then changing the pipeline regulatory framework would reverse this order of things in the later period. This line of extrapolation was probably erroneous because it did not take account of the much more important behavior of independent producers: in the earlier period they provided substantial additions to new reserves, but in the later period, their additions are expected to be small and declining. With the earlier conditions of independent supply, the pipelines had little or no role to play -- their own production declined as substantial and cheaper supplies became available. But they could take on an important role in the 1970's. The shortage resulting from fixed prices and rising costs for independent producers could be ameliorated by the pipelines themselves taking on the higher cost marginal development projects at much greater scale. Thus the prediction of the Commissioners should have been the opposite -- that larger self-produced shares, and larger total new reserves, would follow from allowing the pipelines to pass higher costs through as prices higher than the area rates.

The second view is not that the Commissioners had forecasted from incomplete history, but that they knew most of the history and made the decision with these conditions in mind. The decision in this case, from this viewpoint, was a choice of "equity" over "sound policy" that traded off more field production for a uniform field price schedule. The Commissioners perhaps did this for any number of reasons, one of which was that uniformity of treatment was administratively convenient, but the most persuasive possibility is that they sought equal treatment for all producers -- whether independent or pipeline subsidiary -- even if this might reduce field production.

The choice in the two cases was in favor of equal treatment for all producers with comparable supplies of new reserves. When there was also a supply incentive from meeting the "equity" conditions, then that was provided as well; but when supply incentives required other types of pricing, the Commissioners either were confused on the choice (the historical explanation) or were in favor of equity. They were not able to allow higher costs (and higher prices) that could be justified as "sound policy."

The Commissioners wanted the pipelines directly or indirectly to pay no more for gas, or no less, than the area ceiling prices. These regulated prices have been analyzed by the producing companies, the pipelines, and the Commission staff and there is much disagreement as to whether they were "inequitable," unprofitable, or both. There is little or no objection, however, to characterizing them as market

clearing prices typical of the late 1950's-early 1960's when net additions to new reserve supplies were large and growing each year. These in retrospect were extremely favorable years for the established interstate pipelines: demands for delivered gas were increasing, as was their capacity, but additions to field supplies were so substantial as to put them in the position of choosing among more than enough "big packages" of new reserves each year. The pipelines purchased reserves ahead of new retail demands, at prices that were not rising. These very favorable conditions for the pipelines were to be maintained by the area ceiling prices, both because they resulted in lower pipeline input costs and because they were supposed to result in lower final retail prices.

The regulated prices of course did not do this much because of decreased incentives for supply. By 1969, in the Commissioners' own words, the amounts of new reserves had declined to the extent that "there are indications of a shortage of gas and a threat of a greater shortage." In these circumstances, these two case decisions are extremely revealing of the Commissioners' own purpose. These were choices of ceiling prices that maintained the established field purchase prices and quantities of the pipelines, passing on the shortage to the final consumer. El Paso Gas Transmission, in its role as objector against area rates for its own production, may not support this conclusion; but the Commissioners acted "as if" to maintain the purchase prices of the more established, static pipelines even if at the sacrifice of more supply to final consumers.

The Commissioners and Investments in Electric Power

Regulation under the Federal Power Act follows roughly the same procedures as those for entry and rate controls on natural gas pipelines, so that the Commissioners make decisions on licensing (certification) new power projects and on the prices to be charged by the power companies. There are some important differences in the size of the work load, however. The number of new large scale hydroelectric projects is now very small, so that the F.P.C. deals with few new projects where it has primary jurisdiction; and, even though there are increasingly larger numbers of fossil-fueled and nuclear power projects, state regulatory commissions have the licensing jurisdiction of these new projects because Federal regulation is limited to the interstate sales of bulk power for resale. The number of price and rate-of-return reviews is limited by the scope of jurisdiction, as well; the Commissioners can do little more than settle disputes between large regional power producers and small retail cooperatives on rates and costs of interstate production alone. There is less for the Commissioners to do, although there are still many opportunities to deal with voluminous submissions and to write long decisions.

There were 19 applications for minor and major licenses, and 24 applications for amendments in existing licenses, dealt with by the Commissioners and recorded in the 42nd volume of the F.P.C. Reports. There were only two filings of price schedules involving

rate-of-return matters, and both of these were pro forma submittals of the Southwest Power Administration of the Department of the Interior. The Commissioners dealt more frequently with applications from the interstate power companies for permission to issue notes and securities, and they reported 22 cases on authorizing these issuances.[1] Altogether, these cases contain less information than those on gas pipeline certification and rates.

The 19 new and 24 amended applications for licenses were all granted by the Commissioners. They approved the two price schedules, and allowed the issuance of notes and securities in all of the 22 requests. There were not enough rate cases to divine the will of the Commission, but otherwise it would appear as if the regulators let the electric power companies carry out any construction or financial project they wanted.

There were a very few cases, however, that involved F.P.C. consideration of conditions on issuing the license, conditions likely to make that which was granted potentially quite different from that originally requested. Perhaps the Commissioners never denied an applicant but rather gave him a license for a project so changed that he did not wish to undertake it. In the Pacific Gas and Electric Project #2467, the Company applied for a major license to operate a

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[1] To complete the Commissioners' coverage of the electricity producers, there were also two cases in which the companies applied for reductions in the annual charges levied by the F.P.C. on regulated firms. Cf. 42 FPC 45 and 42 FPC 1022.

long-completed project on the Merced River (previously planned to be a first stage of a larger project, but now terminated at this stage) and there were responses from the Army Corps of Engineers, the U. S. Department of Health, Education, and Welfare, and the State of California Game and Fish Department. Because the project was long since complete, there were no recommendations for revising construction plans but the Corps of Engineers did recommend that previously-established minimum stream flows be imposed on PG&E as license requirements. This request, and one that "the license shall ... operate the project in a manner to prevent rapid and extreme fluctuations in the reservoir level ... and coordinate project operations in the interests of fish and wildlife",[1] were made requirements by order of the Commission.[2] They can be construed as potential changes in the license as a result of regulatory requirements; but, given the vagueness of language on "rapid and extreme fluctuations" and "coordinate project operations" and the *de facto* existence of the project, the effects could not be very substantial.

In the case of Georgia Power Company's application for the Lauren Shoals Project #2413, the dam and turbine facilities had not been built, and the conditions requested by the Department of the Interior were more stringent. Their recommendations included having Georgia Power construct

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[1] 42 FPC 237, at 238.

[2] *Ibid.*, article 38 at 242.

more than 25 recreational areas around the artificial lake behind the dam, provide access to islands found in the lake, and also acquire a 200-foot strip of land around the entire lake as environmental protection. Georgia Power responded to these requirements, "objecting to being required to acquire land in fee above the normal pool elevation of the proposed reservoir" and suggesting in return that for some of this "State and Federal funds be used to accomplish this purpose."[1] The Commissioners split the difference by requiring a recreational use plan with 23 scaled-down camping and boating sites and also ordering Georgia Power to acquire all lands along a 50-foot strip adjacent to the water line.[2] There was no question that in principle the "responsibility for acquiring and developing lands for recreation areas ... rests on the applicant"[3] but this had to be subject to the applicant's "financial ability to construct and operate the project."[4]

In the Consumers Power Company application for a license to construct a pumped-storage facility, the concerned governmental agencies requested more extensive additional facilities for aesthetic and recreational gains, and the Commissioners required even less extensive additions than in the Georgia Power Company decision. Consumers Power had proposed a pumped storage plant of 1872 megawatts capacity on the edge

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1 42 FPC 356, at 358.

2 Ibid., at 358-359.

3 Ibid., at 359.

4 Ibid., at 362.

of Lake Michigan, and the Department of the Interior approved of the proposal as long as "consideration be given to landscaping the dike and varying its elevation to blend the ridge line into the natural terrain ... and the area around the jetties be studied relative to its availability for fishing."[1] The Company responded that the landscaping of the dike into the ridge line "would necessitate the addition of millions of yards of fill materials to the dike, increasing the costs in the neighborhood of ten million dollars."[2] The jetties could not be used for fishing "due to their close proximity to the water intakes and discharges of the plant."[3] This was the view of the Commissioners; the costs of this redesign were obviously great, so that they rejected the proposals of Interior and allowed the license without the requirements for environmental improvements.

The three cases leave little doubt but that there are F.P.C. requirements for additional expenditures attached to licenses for large scale power projects. These are probably not extensive -- at least these decisions did not abridge the basic ability of the power company to build anything that seemed profitable, and when there was some chance that the proposed additional expenditures could have exceeded 10 per cent of the project budget, then the requirements were excluded in the final decision. They indicate an interest of the Commissioners

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[1] 42 FPC 274, at 275.

[2] Ibid., at 275.

[3] Ibid.

in profitable large scale power projects, and in a small proportion of the profits going to recreational services for the communities close to the projects. There was no interest, or at least none expressed in these decisions, in determining whether the costs of recreation ought not to be imposed on the industrial and home consumers of electric power. These decisions show no more than that the Commissioners center their attention on the "economics" (or profits) of projects for the power producers.

The Commissioners' ventures into the money markets seem to have had no impact whatsoever. They not only approved every application by a power company for issuing notes, bonds and stocks, but they also did so without reason.

The most complete description of the decision-making process was given in the response to Community Public Service Company's application for authorization of $6 million of promissory notes. The applicant was found to be a Texas company in the electricity and gas business, under F.P.C. jurisdiction on note issuance, and it was ascertained that the notes "will bear interest at the rate in effect for such loans at the date of issue."[1] On this basis the Commissioners found that the proposed issuance was for a "lawful object" and would not impair Community's "ability to perform its service."[2] There are cases more formal and less descriptive. The formalization of process went so far in Volume 42 as

1 42 FPC 909.

2 *Ibid.*, at 910.

to result in an application for issuance of "$20,000,000 in principal amount of its First Mortgage Bonds, __% Series due November 1, 1999 and 150,000 shares of its __% Serial Preferred Stock, Cumulative, par value $100 per share."[1] These are not descriptions of the decision-making process at all, since they equate jurisdictional control with findings of fact, and then conclude from market equilibrium -- the notes "will bear interest" -- that there is a "lawful object" without analyzing the capital market conditions or the profit conditions for this company. Whatever the decision-making process, the Commissioners do not forecast the price of the issuance (rate of interest, or the transactions price of the stock), so that they have no basis for judging the effects on the company and finally on the consumers of electric power. Regulation here has no economic effect, or at least no effect that can be expected from reading the cases.

The electricity licensing and issuance cases together look like the gas certificate cases. The Commissioners, whatever is intended in gas or electricity, have arrived at the point with regulated firms where these firms are allowed every request. The difference is that sometimes gas buyers made requests for facilities and service which were resisted by the gas pipelines but allowed by the Commissioners, but no such requests were made by electricity buyers that went to the decision-report level. Where it might be concluded that the Commissioners still had the gas consumer in mind when issuing certificates,

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[1] Pacific Power and Light Company, 42 FPC 858.

there is no basis for assuming that they had the electricity buyers' interests before them when reviewing dam proposals and appending recreational facilities to them.

A Book Review

If this were a review of The French Lieutenant's Woman, or more appropriately of Galbraith's New Industrial State, then there would have to be some note taken of the ability of the author to evoke the reader's understanding of events with concise and pleasing language. Confronting Volume 42 with these standards is inconceivable; rather, this review can only apply the burden on the authors of the volume to show that there is some content in the cases -- that a decision was made on an issue, and that the decision had some economic effect on those involved or, later, on others carrying on the same activities.

There would seem to have been very little substance to the more than 240 certificate, license, and stock issuance cases reported in 1969. The uniform language in case description, findings and orders showed only that the Commissioners more or less automatically grant any application reaching the case level and have their staff write it all up. Except for those cases initiated by consumers, or involving consumers' issues and leading to a decision actually written by a Commissioner, the burden of proof of substance cannot be sustained. These cases should be eliminated once and for all, so as to prevent unsuspecting readers from being misled into believing that uniform and officious language covers over important decisions.

The few buyers' certificate cases show some limits to the Commission tendencies to meet the demands of producers. The rate-of-return cases do not seem to be devoid of content; indeed, one or two a year in Volume 42 and previous volumes point to limits on earnings that have been systematically in excess of costs. The one or two cases on gas producers' prices showed the Commissioners' preference for the area ceilings over prices likely to provide more gas to clear final consumer markets. Again, the results favor only some pipelines. If the 20 or so rate cases concerned with procedure were eliminated, then the half dozen or less that set rates or field prices would be detectable. They would show that the Commission does not set very restrictive limits on the pipelines -- or they would show this if they were to reproduce the results of the very few substantive cases in the last volume of Reports.

The slim volume of F.P.C. "decisions of substance" would contain two or three dozen signed opinions at most. These would serve well as sources of indicators of the severity of regulatory constraints on the gas producers, the pipelines and the electric power companies. The reader could then see whether the Commissioners systematically favored the pipelines and power producers being regulated, as would seem to have been their tendencies beneath the ponderous language of non-decisions in Volume 42 of The Federal Power Commission Reports.